

West Central Phoenix (WCP) North Plume Water Quality Assurance Revolving Fund (WQARF) Site

Boundaries:

The WCP North Plume Site (Site) is bounded approximately by W. Highland Avenue to the north, 37th Avenue to the east, Indian School Road to the south and 44th Avenue to the west.

Site Status Update:

ADEQ continues to operate the soil vapor extraction (SVE) system at the F&B manufacturing facility. ADEQ's contractor continues to submit Operation and Evaluation Reports evaluating the performance of the SVE system. As of September 2007 over 41,150 pounds of VOCs have been captured.

ADEQ has finalized the Remediation Work Plan for Hill Brothers Chemical Company. This system entails the placement of an SVE system to remove VOCs from below the facility. ADEQ is awaiting a start up date for construction of the remedial system.

The feasibility study was conducted by ADEQ to install an SVE system at the former Rinchem facility. It determined that there was not enough remedial value to place a system there. As a result no pilot test was conducted. Groundwater monitoring continues to be conducted semiannually.

Community Involvement Activities:

A community advisory board (CAB) has been formed for the Site and meets on a regular basis. Details of meeting agendas and minutes for 2007 and 2008 can be viewed at <http://www.azdeq.gov/envIRON/waste/sps/reg.html>. These meetings are open to the public. A 2007 updated fact sheet can be found on the ADEQ Web site at <http://www.azdeq.gov/envIRON/waste/sps/download/phoenix/wcpega/wcpgafact.pdf>.

Site History:

1967-1991: The F&B facility is located near 39th Avenue and Montecito Avenue. Since 1967, F&B has been manufacturing metal aircraft and spacecraft parts and performing sheet metal forming, and assembly. Solvents are used as degreasing agents to clean the surface of the metals. PCE was used as the degreasing solvent until approximately October 1987, when it switched to 1,1,1-trichloroethane (TCA). In April 1991, ADEQ discovered information that PCE had leaked from F&B's degreaser into the soil under the building.

1969: The Hill Brothers facility is located near 42nd Avenue and Turney Avenue. The Hill Brothers facility has operated as a chemical distribution facility at this location since 1969. Chemicals that

include acids, bases, solvents, chlorine, and concrete additives were stored in above ground storage tanks on-site prior to transfer into containers for distribution.

1977-1994: The former Pyramid Industries, Inc. facility is also located at near 39th Avenue and Montecito Avenue, across from the F&B facility. Pyramid operated a telephone and television cable riser boxes manufacturing facility from 1977 to 1994. Operations at the facility required the use of acids, caustics, heavy metals, paints, and methylene chloride. Several suspected sources of contamination have been identified on the Pyramid facility, including the loading dock/dry well, paint room, and historic hook cleaner.

1982-1993: Volatile organic compounds (VOCs) were first detected in groundwater in the WCP area in July 1982. The City of Phoenix (COP) detected trichloroethylene (TCE) in four municipal public supply wells, COP #70, #71, #151, and #152. The Arizona Department of Health Services (ADHS), Salt River Project (SRP), and the COP confirmed the presence of VOCs in the groundwater with sampling in 1983, 1985, and 1986. Groundwater from COP Wells #70 and #71 contained the highest concentrations of TCE and, therefore, were immediately shut down. Wells #151 and #152 were monitored for VOC concentrations from 1982 until 1989. As a result of sampling conducted during February of 1989, COP elected to take both wells #151 and #152 off-line on March 7, 1989.

The former Rinchem facility is located near 41st Avenue and Turney Avenue. Rinchem operated a chemical warehouse and distribution facility that handled solvents, oils, and fuels. Rinchem was the only company that operated at the facility from facility construction in 1982 through June 1993. Several suspected sources have been identified on the Rinchem facility, including the former repackaging area and former tank farm.

1984: Field investigation activities for the WCP North Plume Site have been conducted between 1984 and the present time. Several contaminants have been detected in soil and groundwater samples collected during field investigations at the four facilities. The primary contaminants of concern are PCE, TCE, and 1,1-dichloroethene (1,1-DCE).

Four facilities have been identified as likely sources of the groundwater contamination in the WCP North Plume Site. The four facilities are as follows: the F&B Mfg. Co. (F&B) facility, former Pyramid Industries, Inc. (Pyramid) facility, former Rinchem facility, and Hill Brothers facility. Field investigation activities at the four facilities in the WCP North Plume Site have been conducted since 1984.

1987-1998: In 1987, the WCP area was designated a WQARF Priority List site. In 1997, ADEQ established a Registry for WQARF sites which replaced the Priority List. The Site was placed on the WQARF Registry in April 1998 with a score of 50 out of a possible 120. The Site score was re-evaluated in 2000 with a revised score of 55.

1992: In late 1992, ADEQ entered into a Consent Decree with F&B to conduct an RI/FS, remediate PCE-contaminated soil on-site, reimburse past costs and pay oversight costs.

1995-1999: From 1995 until 1998, F&B was financially unable to fulfill the requirement under the Consent Decree. Between 1998 and 1999, ADEQ and F&B Mfg. Co. negotiated a new Consent Decree, which was approved by the Court in August 1999. Under the new Consent Decree, ADEQ will be completing the RI/FS and will conduct the remediation of the facility.

1999: ADEQ and F&B Mfg. Co. entered into a financial hardship Consent Decree (CD) in Federal Court. Under the CD, ADEQ conducts the remedial investigation / feasibility study (RI/FS) and remediation. F&B is required to make annual payments for a period of time in amounts calculated as a percentage of net sales.

2000-2006: ADEQ has been operating an SVE system at the F&B facility since August 2001 to remediate the PCE contamination beneath the vapor degreaser. In addition, ADEQ removed approximately 210 cubic yards of soil beneath the vapor degreaser during two excavations in July 2000 and September 2001. As of December 2006, over 41,000 pounds of PCE were removed from the source area by the SVE system.

2006: In August, ADEQ issued the Draft RI Report for the WCP North Plume Site for public comment to meet the requirements established under A.R.S. §49-287.03 and A.A.C. R18-16-406. Groundwater samples and water level measurements were collected in September 2006.

Contaminants:

The current contaminants of concern in groundwater include the chlorinated solvents tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), vinyl chloride, and chromium. Other contaminants at the Site include: benzene, toluene, ethylbenzene, total xylenes, methyl tertiary butyl ether (MTBE), and nitrates. Contaminants of concern at the Site may change as new data become available.

Public Health Impact:

To date, testing in the WCP area indicates no exposure to the contamination. Sampling shows that the contaminated soils are under asphalt parking lots or asphalt-surfaced storage areas, or under the concrete floors of buildings. Contaminated drinking water wells in the area have been shut down. In addition, notices have been sent out to all known residences within the WCP area for the testing of domestic wells for contamination.

Site Hydrogeology:

The Site is located within the West Salt River Valley sub-basin of the Phoenix Active Management Area (AMA). The Salt River Valley is an alluvial filled basin located in the Basin & Range physiographic province.

The Site is underlain by silty sands and sandy silts with interbedded clay layers and gravelly sand zones from ground surface to approximately 80 feet below ground surface (bgs). This unit is referred to as the upper alluvial unit (UAU). Beneath that, a 350 foot thick fine grained unit consisting of primarily silt, clay with silty sand and gravel interbeds exists. This is referred to as the middle alluvial unit (MAU). Within the MAU beneath the Site, there is one prominent, laterally continuous coarse-grained interval that is approximately 30 feet thick. This unit is encountered at a depth of approximately 250-280 feet bgs.

Beneath the MAU, the lower alluvial unit (LAU) is encountered, which overlies bedrock. A bedrock graben has been interpreted to exist beneath the Site. This graben trends northeast - southwest and dips gradually to the southwest. It is bounded by normal faults that are possibly associated with a large concealed fault known as the Grand Avenue Fault. The Grand Avenue Fault trends northwest and lies northeast of the Site. The LAU is either absent or thin along the up-thrown sides of the normal faults beneath the Site, and can be as much as 200 feet thick in the down-dropped block.

Depth to groundwater has declined in the past several years. This is attributed principally to the ongoing drought. In 1999, the depth to groundwater in the UAU was approximately 122 feet bgs. By 2002, the depth to groundwater was approximately 132 feet bgs. Depth to groundwater is currently 120 feet to 145 feet bgs (March 2004). The Site sits along a groundwater divide in the UAU, with groundwater flowing to the northwest across most of the Site and to the southwest in the far southern part of the Site. The gradient is approximately 0.003 to the west-northwest (as of March 2004). The coarse grained interval in the MAU acts as a groundwater sink, with water level elevations approximately 30 feet lower than the UAU and approximately 15 feet lower than the LAU. Groundwater flow direction in the coarse grained interval in the MAU is to the west.

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Information Repositories:

Interested parties can review site information at the Information Repository at the Burton Barr Central Library (Arizona Room) located at 1221 N. Central Avenue in Phoenix (602) 262-4636. With 24 hour notice, an appointment to review related documentation is available Monday through Friday from 8:30 a.m. to 4:30 p.m., at the ADEQ Records Management Center, 1110 W. Washington Street in Phoenix, Arizona. Please contact (602) 771-4380 or (800) 234-5677 to schedule an appointment to review these documents.